

### **REMARKS**

The Office Action dated May 20, 2005 has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto. Claims 1-11 are currently pending in the application.

Claims 2 and 9 have been amended to more particularly point out and distinctly claim the subject matter of the invention. No new matter has been added. Claims 1-11 are respectfully submitted for consideration.

Claim 1 was rejected under 35 U.S.C. §102(e) as being anticipated by Lu (U.S. Patent No. 5,887,256). The rejection is respectfully traversed for the reasons which follow.

Claim 1, upon which claims 2 and 3 are dependent, recites a method of allocating a channel in a mobile system. The method includes arranging, in the system, unallocated telecommunication channels between a base station controller and a base station, allocating in call set-up at least one of the telecommunication channels to the base station handling the call, and controlling the base station controller to transmit information to the base station on the telecommunication channel allocated thereto.

The present invention provides for efficient utilization of telecommunication channels between the base station and the base station controller. Channel allocation may be performed call-specifically in order to improve the degree of utilization of the channels. As such, a given telecommunication channel may only be allocated for the duration of the call to a transceiver unit of the base station handling the call. When the

call terminates, the telecommunication channel may be released and it can be freely allocated to another transceiver unit. The same telecommunication channel can thus be allocated call-specifically to various base stations. Thus, a pool of unallocated telecommunication channels is formed between the base stations and the base station controller; from which pool the base station controller allocates a free channel call-specifically to the base station that needs a channel for handling a call at a given time (Specification, page 2, line 34 – page 3, line 11).

As will be discussed below, Lu fails to disclose or suggest all of the elements of the claims, and therefore fails to provide the advantages and features discussed above.

Lu discloses a method for facilitating cellular communication for a plurality of native cellular handsets in a hybrid cellular communication network which includes a cellular exchange subsystem and a private mobile-services switching center. The cellular exchange subsystem is coupled to a public cellular, and the native cellular handsets are handsets that subscribe to the hybrid cellular communication network. The hybrid cellular communication network also facilitates cellular communication between a non-native cellular handset and the public cellular network, where the non-native cellular handsets are handsets that do not subscribe to the hybrid cellular communication network. Access request data is received and a cellular exchange subsystem is used to determine whether the access request data originated from a native cellular handset or from a non-native cellular handset. If the access request data originated from a native cellular handset, then data relating to the access request is passed to the private mobile-

services switching center for completing a first call path from the native cellular handset. If the access request data originated from a non-native cellular handset, then data relating to the access request data is passed to the public cellular network for completing a second call path between the non-native cellular handset and the public cellular network.

Applicants respectfully submit that Lu fails to disclose or suggest all of the elements of present claim 1. Specifically, Lu fails to disclose or suggest that unallocated telecommunication channels are arranged between a base station controller and a base station, as recited in claim 1. Lu only discloses that the traffic channel is selected from the free channels that are available on the link between cPBX subsystem 452 and BSC 172 (Lu, Column 15, lines 27-30). The cPBX is a subsystem of the hybrid local cellular exchange system 500 and performs many of the switching functions of a GSM mobile-services switching center (Lu, Column 5, lines 37-40). Therefore, Lu only discloses that the free channels are available on a link between this subsystem and the base station controller. Lu, however, does not disclose or suggest that the free channels are arranged between a base station and the base station controller. Lu makes no mention of which unallocated channels would be available between a base station controller and base stations. For at least the reasons discussed above, Lu fails to disclose or suggest arranging, in the system, unallocated telecommunication channels between a base station controller and a base station, as recite in claim 1.

Furthermore, Lu also fails to disclose or suggest that at least one of the unallocated telecommunication channels are allocated to the base station handling the call, as recited

in claim 1. Lu only discloses that a channel activate message is sent from the base station controller to the base transceiver station (BTS) requesting that the BTS activate the selected channel. Lu does not disclose allocating the channel. Rather, according to Lu, the channel has previously and permanently been allocated for the base station. As such, Lu only discloses that the base station is asked to activate this previously allocated channel in call set-up. Lu does not make any mention of a previously unallocated channel being allocated for a base station in call set-up and only discusses the allocation of a selected channel. Therefore, Lu fails to disclose or suggest allocating, in call set-up, at least one of the telecommunication channels to the base station handling the call, as recited in claim 1.

For at least the reasons discussed above, Applicants respectfully assert that Lu fails to disclose or suggest all of the elements of claim 1. Consequently, Applicants respectfully request that the rejection of claim 1 be withdrawn.

Claim 2 was rejected under 35 U.S.C. §103(a) as being unpatentable over Lu in view of Tiedemann (U.S. Patent No. 5,987,326) and further in view of Choi (U.S. Patent No. 6,724,740). The Office Action took the position that Lu discloses all of the elements of the claim, with the exception of telecommunication channels are classified on the basis of their characteristics into at least two categories, i.e. primary telecommunication channels and secondary telecommunication channels, and in call set-up, a primary telecommunication channel, if available, is allocated to the base station, otherwise a free secondary telecommunication channel is allocated thereto. The Office Action then relies

upon Tiedemann and Choi as allegedly curing this deficiency in Lu. The above rejection is respectfully traversed for the reasons which follow.

Lu is discussed above. Tiedemann discloses a method and apparatus for controlling handoff in a communication system. The communication system provides for independent handoff of the fundamental code channel and supplemental code channels on the forward link. When the supplemental code channel is not in handoff, the supplemental code channels are only transmitted by the base station with the strongest pilot received at the subscriber unit. The Extended Handoff Direction Message, which directs the subscriber unit to the base stations currently transmitting data to it, separately specifies the base stations transmitting the fundamental code channel and supplemental code channels.

Choi discloses a CDMA communication system for transmitting/receiving control information during a voice or data communication service by using a dedicated control channel. The system includes a base station device and a terminal device. The base station device has a forward pilot channel generator for generating a pilot signal, a forward dedicated control channel generator for generating a control message for a forward dedicated control channel, a forward fundamental channel generator for generating a voice signal, and a forward supplemental channel generator for generating packet data. The terminal device includes a reverse dedicated control channel generator for generating a control message for a reverse dedicated control channel, a reverse pilot channel generator for generating a pilot signal by adding a power control signal to the

pilot signal, a reverse fundamental channel generator for generating a voice signal, and a reverse supplemental channel generator for generating packet data.

Applicants note that claim 2 is dependent upon claim 1. As discussed above, Lu fails to disclose or suggest all of the elements of claim 1. Additionally, Tiedemann and Choi fail to cure the deficiencies in Lu as discussed above. Thus, Lu, Tiedemann and Choi, whether taken alone or combined, fail to disclose or suggest all of the elements of claim 2. Furthermore, claim 2 should be allowed for at least its dependence upon claim 1, and for the specific limitations recited therein.

Claim 3 was rejected under 35 U.S.C. §103(a) as being unpatentable over Lu in view of Tiedemann and further in view of Farias (U.S. Patent No. 4,891,806). The Office Action took the position that Lu and Tiedemann discloses all of the elements of the claim, with the exception of the free telecommunication channels being classified into categories on the basis of their data transmission capacity or quality such that the primary telecommunication channels have larger data transmission capacity or they are of better quality than the secondary telecommunication channels. The Office Action then relies upon Farias as allegedly curing this deficiency in Lu and Tiedemann. The above rejection is respectfully traversed for the reasons which follow.

Lu and Tiedemann are discussed above. Farias discloses a method of receiving main and secondary channel data in a data modem. The method includes the steps of receiving a plurality of constellation symbols, determining which of the constellation symbols are associated with a main and secondary channel constellation, processing the

main channel constellation symbols according to a method for extracting data from main channel constellation symbols, and processing the secondary channel constellation symbols according to a method for extracting data from secondary channel constellation symbols.

Applicants note that claim 3 is dependent upon claim 1. As discussed above, Lu fails to disclose or suggest all of the elements of claim 1. Additionally, Tiedemann and Farias fail to cure the deficiencies in Lu as discussed above. Thus, Lu, Tiedemann and Farias, whether taken alone or combined, fail to disclose or suggest all of the elements of claim 3. Furthermore, claim 3 should be allowed for at least its dependence upon claim 1, and for the specific limitations recited therein.

Claims 4 and 7-11 were rejected under 35 U.S.C. §103(a) as being unpatentable over Lu in view of Kanai (U.S. Patent No. 6,195,566). The Office Action took the position that Lu discloses all of the elements of the claims, with the exception of the switching means and control means as recited in the claims. The Office Action then relies upon Kanai as allegedly curing this deficiency in Lu. The above rejection is respectfully traversed for the reasons which follow.

Claim 4, upon which claims 5-8 are dependent, recites a mobile system including a base station controller and at least a first and a second base station, which comprise transceiver units for establishing a telecommunication connection by radio signals to the subscriber terminals located in the base station coverage area and switching means for switching the base station transceiver units onto a particular channel of a plurality of

optional telecommunication channels between the base station controller and the base stations. The base station controller comprises control means which, in call set-up, allocate at least one of the telecommunication channels to the first or the second base station for the call and which transmit a predetermined message indicating the allocated telecommunication channel to the base station to which the channel is allocated. The switching means of the first, and correspondingly, of the second base station are responsive to the message for switching the base station transceiver units to the telecommunication channel assigned by the message.

Claim 9, upon which claim 10 is dependent, recites a mobile system base station, which includes transceiver units for establishing a telecommunication connection by radio signals to the subscriber terminals located in the coverage area of the base station. The mobile system base station further includes switching means for switching its transceiver units to particular channels of a plurality of optional telecommunication channels. The switching means are responsive to a message received by the base station in conjunction with the call set-up for switching a particular transceiver unit onto the telecommunication channel indicated by the message for the call.

Claim 11 recites a base station controller. The base station controller includes means for communicating with base stations via a plurality of optional telecommunication channels between the base station controller and the base stations. The base station controller also includes control means which are arranged to allocate, in call set-up, at least one of the telecommunication channels to a base station for a call and



which are arranged to transmit a predetermined message indicating the allocated telecommunication channel to the base station to whom the channel is allocated.

As will be discussed below, Lu and Kanai fail to disclose or suggest all of the elements of the claims, and therefore fails to provide the features discussed above.

Lu is discussed above. Kanai discloses a cellular radio communication system utilizing integrated base stations. The system includes a cell containing a first base station with conventional transceivers and base station facilities, and the antenna of a second base station facility. The first base station facility is made up of a group of base stations facilities where the equipment is integrated, while the second base station is a conventional local base station. A transceiver may have unused capacity and a caller with a low priority may not be assigned to the transceiver even though capacity is available. Instead, the capacity is kept available for a caller with a higher priority. Traffic monitors are used by portable telephone providers to manage the traffic in every cell, and traffic can be assigned to the transceiver based on the provider with the highest volume or according to a prearranged priority scale.

Applicants respectfully submit that Lu and Kanai, whether considered alone or in combination, fail to disclose or suggest control means which, in call set-up, allocate at least one of the telecommunication channels to the base station for the call, as recited in claims 4 and 11. The Office Action argues that the processor 184 of the BSC 172 in Fig. 2 of Lu discloses such a control means. Applicants respectfully disagree. Lu does not disclose or suggest that the processor 184 allocates any telecommunication channel

between the base station controller and the base station during call set-up. Rather, Lu only discloses that the processor 184 handles radio resource control (Lu, Column 8, lines 40-41). Therefore, Lu fails to disclose or suggest the control means of the present claims.

In addition, Kanai also fails to disclose or suggest control means which, during call set-up, allocate at least one of the telecommunication channels to the base station for the call, as recited in claims 4 and 11. The Office Action alleges that the controller 130 of Kanai corresponds to the control means of the present invention. The control means of the present invention is recited as an element of the base station controller. Kanai, on the other hand, discloses that the controller 130 is located in the “integral base station” (Kanai, Fig. 1). Moreover, Kanai fails to disclose or suggest that the controller 130 allocates a channel to a base station during call set-up. Instead, Kanai teaches that the controller 130 controls the distribution of resources depending upon the traffic situation inside each cell (Kanai, Column 5, lines 32-33 and 37-40). As such, Kanai teaches that channel allocation should be carried out in advance of call set-up and as soon as the traffic situation at a base station is close to the upper capacity limit of the base station in question (Kanai, Column 4, lines 52-56). Therefore, Kanai fails to disclose or suggest control means which allocate telecommunication channels to a base station **during call set-up**, as recited in claims 4 and 11.

For at least the reasons discussed above, Applicants respectfully assert that Lu and Kanai, whether considered alone or in combination, fail to disclose or suggest control means which, during call set-up, allocate at least one of the telecommunication channels

to the base station for the call, as recited in claims 4 and 11. Thus, Applicants respectfully request that the rejection of claims 4 and 11 be withdrawn.

Furthermore, Applicants respectfully submit that the combination of Lu and Kanai fails to disclose or suggest switching means for switching the base station transceiver units onto a particular channel of a plurality of optional telecommunication channels between the base station controller and the base stations, as recited in present claims 4 and 9. The Office Action acknowledges that Lu fails to disclose or suggest the switching means of the present claims. However, the Office Action cites the switching device 105 of Kanai as allegedly corresponding to the switching means of the present invention. The switching device 105 of Kanai is located between the transceiver units 104 and the antennas 112 of the base station (Kanai, Fig. 1). A switching means in such a location cannot be used for switching the base station transceiver units onto a particular channel between the base station controller and the base stations, as recited in the present claims. Additionally, Kanai only discloses that the switching device 105 is used to connect any one of the transceivers 104 to any one of the multiplexers 106 (Column 3, lines 35-40). Kanai does not disclose that the switching device is used to switch the base station transceiver units onto a particular channel between the base station controller and the base stations. Applicants also respectfully assert that Kanai fails to disclose or suggest that the switching means is responsive to a message received by the base station in conjunction with the call set-up for switching a particular transceiver unit onto the telecommunication channel indicated by the message for the call, as recited in claim 9.

Therefore, for at least the reasons discussed above, Applicants respectfully assert that Lu and Kanai, whether considered alone or in combination, fail to disclose or suggest switching means for switching the base station transceiver units onto a particular channel of a plurality of optional telecommunication channels between the base station controller and the base stations, as recited in present claims 4 and 9. Thus, Applicants respectfully request that the rejection of claims 4 and 9 be withdrawn.

Claims 7, 8, and 10 are dependent upon claims 4 and 9, respectively. As such, claims 7, 8, and 10 should be allowed for at least their dependence upon claims 4 and 9, and for the specific limitations recited therein.

Claim 5 was rejected under 35 U.S.C. §103(a) as being unpatentable over Lu in view of Kanai, and further in view of Tiedemann and Choi. The Office Action took the position that Lu and Kanai disclose all of the elements of the claim, with the exception of the telecommunication channels being classified on the basis of their characteristics into at least two categories, that is, into primary telecommunication channels and secondary telecommunication channels and that a primary telecommunication channel, if available, is allocated to the call, otherwise a free, secondary telecommunication channel is allocated thereto. The Office Action then relies upon Tiedemann and Choi as allegedly curing this deficiency in Lu and Kanai. The above rejection is respectfully traversed for the reasons which follow.

Claim 5 is dependent upon claim 4. As discussed above, Lu and Kanai fail to disclose or suggest all of the limitations of claim 4. Furthermore, Tiedemann and Choi

fail to cure the deficiencies in Lu and Kanai with respect to claim 4. Thus, the combination of Lu, Kanai, Tiedemann, and Choi fails to disclose or suggest all of the elements of claim 5. Additionally, claim 5 should be allowed for at least its dependence upon claim 4 and for the specific limitations recited therein.

Claim 6 was rejected under 35 U.S.C. §103(a) as being unpatentable over Lu in view of Kanai in further view of Farias. The Office Action took the position that Lu and Kanai disclose all of the elements of claim 6, with the exception of the primary telecommunication channels having larger data transmission capacity or being of better quality than the secondary telecommunication channels. The Office Action then relies upon Farias as allegedly curing this deficiency in Lu and Kanai. The above rejection is respectfully traversed for the following reasons.

Claim 6 is dependent upon claim 4. As discussed above, Lu and Kanai fail to disclose or suggest all of the limitations of claim 4. Furthermore, Farias fails to cure the deficiencies in Lu and Kanai with respect to claim 4. Thus, the combination of Lu, Kanai, and Farias fails to disclose or suggest all of the elements of claim 6. Additionally, claim 6 should be allowed for at least its dependence upon claim 4 and for the specific limitations recited therein.


Applicants respectfully submit that the cited prior art fails to disclose or suggest critical and important elements of the claimed invention. These distinctions are more than sufficient to render the claimed invention unanticipated and unobvious. It is

therefore respectfully requested that all of claims 1-11 be allowed, and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



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Majid S. AlBassam  
Registration No. 54,749

**Customer No. 32294**  
SQUIRE, SANDERS & DEMPSEY LLP  
14<sup>TH</sup> Floor  
8000 Towers Crescent Drive  
Tysons Corner, Virginia 22182-2700  
Telephone: 703-720-7800  
Fax: 703-720-7802

MSA:jf

Enclosures: Petition for Extension of Time